

Research Fellowship in Space Environments and Effects

Directorate of Technical and Quality Management

ESTEC, Noordwijk, The Netherlands

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Overview of the Division's mission

The Electromagnetics and Space Environment Division provides support to the development of ESA missions and programmes, and undertakes related R&D activities, in: space environments (radiation, plasmas, etc.) and their effects; electromagnetic compatibility (EMC); electrostatic charging and discharging; electrostatic and magnetic cleanliness; antennas and sensor systems up to the sub-millimetre waves; and wave propagation and interactions,. The Division also has capabilities and facilities for EMC and Antenna testing.

Overview of the field of research proposed

The Space Environments and Effects Section addresses a broad range of environments of concern to space systems. In the process of studying, selecting and developing future missions, the various environments are evaluated and quantitative assessments are made of the likely effects on missions. Environments include high energy particle radiation (radiation belts, solar particle events, cosmic rays, etc.), plasma environments (magnetospheric, ionospheric, interplanetary), atmospheres (Mars, Earth's exosphere), "microparticles" (small sized space debris, micrometeoroids, dust), and others, as necessary. The effects/interests can include a wide range of radiation effects (accumulated dose effects, single particle effects, internal electrostatic charging, sensor interference, etc.), surface electrostatic charging by plasmas, planetary atmosphere operations, microparticle damage risks, and so on.

To perform these tasks requires development and use of models of the environments and of the environmental interactions. Models of the environments listed above are made through data analyses and physical simulations in order to provide quantitative mission specifications and inputs to further analyses. Modelling of effects can use many techniques including particle-in-cell and Monte-Carlo methods, as well as custom modelling. This work is supported by data from space environment and effects sensors on spacecraft, which are also developed by the section, involving performance simulation and experimental characterization. Applications with proposals are welcomed to perform research in any of the above areas. Further details of the section activities can be found on www.space-env.esa.int .

Who can apply

The programme is open to suitably qualified women and men. Preference will be given to applications submitted by candidates within five years of receiving their PhD.

The Research Fellow Programme is open to nationals of the following states: Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, and the UK, or Canada as a Cooperating State, Bulgaria, Estonia, Hungary, Latvia, Slovakia and Slovenia as European Cooperating States (ECS).

Required qualifications

Applicants must have recently completed their PhD studies in a relevant physics or engineering domain.

Applicants should have good analytical and communication skills and should be able to work in a multi-cultural environment in an autonomous manner.

Applicants must be fluent in English and/or French, the working languages of the Agency. A good proficiency in English is required.

How to Apply

Please fill in the [online](#) application form attaching to it, **in one document only**, your CV, your motivation letter and your research proposal.

Candidates must also arrange for up to **three letters of reference** to be sent by e-mail, before the deadline, to **temp.htr@esa.int**. The letters must be sent by the referees themselves. The candidate's name must be mentioned in the subject of the email.

Applications satisfying the general conditions for eligibility, to be submitted **by 6 May 2015**, will be evaluated and successful applicants will be invited for an interview.

Interested candidates are highly encouraged to visit the ESA website: www.esa.int.